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"These I have carefully reduced, and the value of the mass which I have found from the observations of the fourth satellite (which are more to be depended on for this purpose than those of the second) is $\frac{1}{20897}$, which is almost exactly a mean between the results of Bouvard and Lamont. In obtaining this result, I have rejected the first day's observations, which are discordant both for the second and fourth satellites.

"I have also reduced all Sir Wm. Herschel's measures of distance of the satellites given in his paper in the *Phil. Trans.*, 1815, and the value of the mass obtained from the observations of the fourth satellite is $\frac{1}{21165}$, which agrees very closely with that found from Mr. Lassell's observations. Although, therefore, more numerous observations will be requisite in order to obtain a mass which may be used with confidence in the theory of *Neptune*, I have no doubt that the value $\frac{1}{21000}$ is much nearer the truth than either of those which have been previously given, and I shall accordingly employ it in my subsequent calculations respecting the orbit of *Neptune*.

"The most probable values of the periods of the second and fourth satellites, given by the combination of the observations of Sir Wm. Herschel, Sir J. Herschel, Lamont, and Mr. Lassell, are $8^{d}·7058435$ and $13^{d}·463139$ respectively; but the remaining errors of the epochs are greater than can with probability be ascribed to mere errors of observation, and seem to indicate the existence of considerable perturbations."

GOUJON'S COMET.

BERLIN. (Dr. Galle.)

	Berlin M.T.	R.A.	Dec.
1849.	h m s	° ′ ″	° ′ ″
April 26	10 20 21	165 30 59·4	+10 40 49·8
27	10 6 37	165 28 39·2	+13 51 12·3

HAMBURG. (M. G. Rümker.)

	Hamburg M.T.	R.A.	Dec.
	h m s	° ′ ″	° ′ ″
April 23	9 27 27·6	165 45 26·6	+ 0 28 30·6
24	8 51 41·8	39 30·3	Meridian.
May 2	10 36 1·0	30 34·1	28 4 35·8
3	10 31 54·1	33 57·3	30 29 5·9
4	10 23 53·2	38 8·8	32 44 44·7
5	10 3 3·3	43 14·9	34 51 37·5
	11 3 37·3	43 29·8	34 56 51·6
6	9 25 55·9	165 49 1·0	36 49 53·6
12	11 43 33·4	166 42 38·2	46 46 30·6
18	11 58 27	168 3 8·0	53 35 0·4
20	11 41 58·6	35 54·3	55 22 2·8
21	11 7 1·3	168 52 55·4	56 10 20·0
22	11 59 18·3	169 11 11·2	+56 59 24·7

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Liverpool. Equatoreal. (Mr. Hartnup.)

1849.	Greenwich M.T.	R.A.	Log. $\frac{p}{P}$	N.P.D.	Log. $\frac{q}{P}$	Star.
	h m s	h m s		° ′ ″		
April 23	11 59 36·4	11 2 56·69	+8·4320	89 3 47·1	−9·9028	*a*
26	10 55 13·0	11 2 4·00	8·3043	79 7 11·1	9·8371	*b*
27	12 31 34·1	11 1 53·07	8·5276	75 42 50·9	9·8390	*c*
28	12 27 3·6	11 1 47·37	8·5336	72 38 45·4	9·8200	*d*
30	12 29 18·1	11 1 47·99	8·5625	66 52 28·8	9·7850	*e*
May 7	10 35 29·6	11 3 44·81	8·4667	51 7 48·3	9·5008	*f*
8	11 47 53·8	11 4 16·72	8·6303	49 15 51·2	9·5781	*f*
11	13 58 22·5	11 6 11·95	+8·7542	44 26 12·2	−9·7442	*g*

a	B.A.C.	3903, 3909	*d*	B.A.C.	3838
b	,,	3761, 3837	*e*	,,	3834
c	,,	3483	*f*	,,	3856
			g	,,	3868

" The observations are corrected for refraction. The corrections to be applied for parallax in time and arc are represented by *p* and *q*. P is the equatoreal horizontal parallax.

" The light of the comet was strongly condensed towards the centre; but the nucleus was not so well defined, nor the coma so extensive, as in the Schweizer-Bond Comet. I did not observe any tail."

Elements.

M. d'Arrest has calculated elements on the following observations:—

			R.A.	Dec.
	h m s		° ′ ″	° ′ ″
April 15	11 39 6	Paris.	167 7 0·0	−25 31 25·0
20	11 19 13	Altona.	166 7 57·6	− 9 36 31·2
27	9 41 23	Leipsic.	165 28 29·0	+13 48 20·2

T. 1849, May 26·43349, Berlin M.T.

π .... 235° 31′ 25″·3 } Mean Eq.
☊ .... 202 30 55·0 } 1849·0
i ..... 67 19 59·7
Log. q 0·0648988 Motion direct.

" These elements represent Dr. Petersen's observations, very nearly."—*Professor Schumacher.*

Ephemeris. By M. Weyer.

For Berlin Mean Midnight.

	R.A.	Dec.	Log. Δ		R.A.	Dec.	Log. Δ
	° ′	° ′			° ′	° ′	
April 30	165 29	+23 6	9·590	May 9	166 15	+42 32	
May 1	30	25 48		10	24	44 6	
2	32	28 21		11	34	45 35	
3	36	30 46		12	45	46 59	9·735
4	41	33 2	9·635	13	166 56	48 17	
5	47	35 10		14	167 8	49 31	
6	165 53	37 11		15	21	50 41	
7	166 0	39 5		16	167 35	+51 46	9·782
8	166 7	+40 52	9·685				

From M. G. Rümker's elements, which agree pretty nearly with those of Professor Argelander.

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Ephemeris of Goujon's Comet. By M. Weyer, from his own elements, which represent the Hamburg observations of May 12 thus,—

	$\Delta\alpha$ cos. δ	$\Delta\delta$
	″	″
Calcul.—Obs. =	+4·8	+5·0

Ephemeris (for 10^h Berlin M.T.)

1849.	R.A.	N.P.D.	log. Δ	log. r	Light
	° ′	° ′			
May 20	168 34·7	34 42·4	9·8269	0·0658	0·428
21	168 52·0	33 52·8	·8372	·0653	·409
22	169 10·0	33 5·7	·8473	·0650	·391
23	28·5	32 20·7	·8571	·0646	·374
24	169 47·9	31 37·9	·8668	·0644	·358
25	170 8·0	30 57·3	·8761	·0643	·343
26	28·8	30 18·5	·8853	·0643	·329
27	170 50·3	29 41·4	·8941	·0643	·316
28	171 12·5	29 6·0	·9029	·0644	·303
29	35·4	28 32·4	·9113	·0646	·291
30	171 58·9	28 0·3	·9197	·0649	·280
31	172 23·1	27 29·5	·9277	·0652	·270
June 1	172 48·0	27 0·0	·9356	·0657	·260
2	173 13·5	26 31·9	·9432	·0662	·250
3	173 39·7	26 5·0	·9507	·0668	·241
6	175 2·7	24 50·2	·9720	·0691	·216
9	176 32·2	23 44·1	9·9918	0·0721	0·194

"The intensity of light $\left(=\frac{1}{\Delta^2 r^2}\right)$ supposes, as unity, the intensity at its discovery. Δ and r are, as usual, the distances of the comet from the earth and sun."—*Communicated by Professor Schumacher.*

SCHWEIZER'S COMET.*

This comet was discovered on April 11th, at $9\frac{1}{2}^h$ P.M., by Professor Schweizer, of Moskow, who saw it in conjunction with *χ Boötis,* and about 1° south of the star.

Professor Bond observed the comet a few hours later (see p. 128). It was discovered by Mr. Graham on the 14th. The comet had a strong, star-like, central condensation, an extensive coma, and no tail. It has been supposed to be the second comet of 1748 (No. 70), the elements of which were computed by Bessel from three imperfect observations of Klinkenberg.

* The Editor follows the authority of Professor Schumacher in naming this comet; though, under the circumstances, he would have preferred the title of Schweizer-Bond, as recalling the facts of its discovery.